WHAT IS CLAIMED IS:

1. An in-plane switching mode active matrix type liquid crystal display device comprising:

(a) a first substrate;

(b) a second substrate located opposing said first substrate; and

(c) a liquid crystal layer sandwiched between said first and second substrates,

wherein said first substrate includes:

(a1) a thin film transistor having a gate electrode, a drain electrode and a source electrode;

(a2) a pixel electrode each associated to a pixel to be driven;

(a3) a common electrode to which a reference voltage is applied;

(a4) data lines;

(a5) a scanning line; and

(a6) common electrode lines,

said gate electrode is electrically connected to said scanning line, said drain electrode is electrically connected to said data lines, said source electrode is electrically connected to said pixel electrode, and said common electrode is electrically connected to said common electrode lines,

molecular axes of liquid crystal in said liquid crystal layer are rotated in a plane parallel with said first substrate by an electric field substantially parallel with a plane of said first substrate and to be applied between said pixel electrode and said common electrode, to thereby display certain images,

said common electrode is composed of transparent material, and are formed on a layer located closer to said liquid crystal layer than said data lines,

said common electrode entirely overlaps said data lines with an insulating layer being sandwiched therebetween except an area where said data lines are located in the vicinity of said scanning line,

said in-plane switching mode active matrix type liquid crystal display device further includes a light-impermeable layer in an area where said common electrode entirely overlaps the data lines,

said light-impermeable layer is formed on said second substrate or on said first substrate such that said light-impermeable layer and said liquid crystal layer are located at the same side with respect to said data lines and that said light-impermeable layer faces said data lines,

said light-impermeable layer is comprised of a black matrix layer or multi-layered color layers,

said black matrix layer or said multi-layered color layers has a width smaller than a width of said common electrode overlapping said data lines.

2. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, wherein said common electrode is electrically connected to said common electrode lines through a contact hole in each of pixels.

3. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, wherein said black matrix layer facing said data lines is formed in a line.

4. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 3, wherein a distance along a substrate between one of ends of said black matrix layer facing said data lines and an end of said data lines, located opposite to said one of ends of said black matrix layer, is equal to or greater than 4 $\mu$m in a cross-section taken along a plane perpendicular to a direction in which said data lines extend.

5. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 3, wherein said black matrix layer is formed on said

second substrate, and said black matrix layer facing said data lines overlaps said data lines anywhere by 4 $\mu$m or greater, when viewed from above.

6. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, wherein one of said first and second substrates is comprised further of a color layer formed in a line.

7. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, further comprising a reverse-rotation preventing structure in a sub pixel area in which all liquid crystal molecules are rotated in the same direction, for preventing liquid crystal molecules from rotating in a direction opposite to said same direction,

said reverse-rotation preventing structure including an auxiliary electrode to which a voltage equal to a voltage of at least one of said pixel electrode and said common electrode is applied such that an initial alignment orientation of liquid crystal molecules overlaps a direction of an electric field generated in said sub pixel area in all sub-areas in said sub pixel areas, if said initial alignment orientation rotates by an acute angle.

8. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, further comprising an interlayer insulating film formed below said common electrode overlapping said data lines, said interlayer insulating film being comprised of an upper layer and a lower layered, said upper layer being formed only below a portion of said common electrode which portion overlaps said data lines.

9. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, wherein said common electrode is wider than said data lines at opposite ends in a width-wise direction thereof by 1.5 $\mu$m or greater.

10. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, wherein said black matrix layer has a width smaller than a width of said data lines, and overlaps said data lines in its entire length.

11. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, wherein said black matrix layer is formed on said second substrate, and said black matrix layer facing said data lines has a width equal to or greater than 6 $\mu$ m.

12. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, wherein said black matrix layer overlaps said scanning line and a region therearound, and an area sandwiched between said scanning line and said pixel electrode and a region therearound.

13. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, wherein said pixel electrode is composed of transparent material.

14. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, wherein said common electrode and said pixel electrode are formed in a common layer.

15. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, further comprising an interlayer insulating layer formed in a layer located immediately below said common electrode, and a pixel auxiliary electrode comprised of a single or a plurality of layer(s) formed below said interlayer insulating layer,

said pixel auxiliary electrode being electrically connected to said source

electrode, and being kept at a voltage equal to a voltage of said pixel electrode,

said pixel auxiliary electrode being composed of opaque metal.

16. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 15, wherein said pixel auxiliary electrode is at least partially formed below said pixel electrode formed in a layer in which said common electrode is formed, and having a plurality of comb-teeth.

17. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, further comprising an interlayer insulating layer formed in a layer located immediately below said common electrode, and a common auxiliary electrode comprised of a single or a plurality of layer(s) formed below said interlayer insulating layer,

said common auxiliary electrode being electrically connected to said common electrode lines, and being kept at a voltage equal to a voltage of said common electrode,

said common auxiliary electrode being composed of opaque metal.

18. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 17, wherein said common auxiliary electrode is formed below said common electrode having a plurality of comb-teeth.

19. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, wherein a scanning line terminal, a data line terminal and a common electrode line terminal are covered with or composed of a material of which said common electrode comprised of transparent electrodes are composed.

20. The in-plane switching mode active matrix type liquid crystal display

device as set forth in claim 15, further comprising a reverse-rotation preventing structure in a sub pixel area in which all liquid crystal molecules are rotated in the same direction, for preventing liquid crystal molecules from rotating in a direction opposite to said same direction,

at least a part of edges of said pixel auxiliary electrodes and said common electrode lines being formed oblique such that an initial alignment orientation of liquid crystal molecules overlaps a direction of an electric field generated in said sub pixel area in all sub-areas in said sub pixel areas, if said initial alignment orientation rotates by an acute angle.

21. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, further comprising a passivation film covering said common electrode therewith.

22. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 21, further comprising a passivation film covering said pixel electrode therewith.

23. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, wherein said first substrate is formed with one of a first contact hole electrically connecting said pixel electrode to said source electrode, and a second contact hole electrically connecting said common electrode to said common electrode lines,

said first and second contact holes being square or rectangular in shape, and having a side having a length equal to or greater than 6 $\mu$ m.

24. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, wherein said first substrate is formed with one of a first contact hole electrically connecting said pixel electrode to said source

electrode, and a second contact hole electrically connecting said common electrode to said common electrode lines,

said first and second contact holes being covered at inner surfaces thereof with a metal film.

25. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, wherein said pixel electrode is formed of a second metal layer of which said data lines are formed.

26. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 25, wherein said pixel electrode is formed of a second metal layer of which said drain electrode is formed, in an area in which an image is displayed, and a portion of said common electrode other than a portion composed of transparent metal and overlapping said data lines is formed of a first metal layer of which said gate electrode is formed.

27. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 26, further comprising an interlayer insulating film sandwiched between said data lines and said common electrode overlapping said data lines and composed of transparent metal, said interlayer insulating film being formed only below said common electrode.

28. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, further comprising an interlayer insulating film sandwiched between said data lines and said common electrode overlapping said data lines and composed of transparent metal, said interlayer insulating film being comprised of an inorganic film.

29. The in-plane switching mode active matrix type liquid crystal display

device as set forth in claim 1, further comprising an interlayer insulating film sandwiched between said data lines and said common electrode overlapping said data lines and composed of transparent metal, said interlayer insulating film being comprised of an organic film.

30. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, further comprising an interlayer insulating film sandwiched between said data lines and said common electrode overlapping said data lines and composed of transparent metal, said interlayer insulating film being comprised of a first film comprised of an inorganic film and a second film comprised of an organic film and covering said first film therewith.

31. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 28, wherein said inorganic film is comprised of one of a silicon nitride film, an inorganic polysilazane film, a silicon oxide film, and a multi-layered structure including two or more of them.

32. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 30, wherein said inorganic film is comprised of one of a silicon nitride film, an inorganic polysilazane film, a silicon oxide film, and a multi-layered structure including two or more of them.

33. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 29, wherein said organic film is comprised of one of a photosensitive acrylic resin film, a photosensitive polyimide film, a benzocyclobutene (BCB) film, an organic polysilazane film, and a siloxane film.

34. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 30, wherein said organic film is comprised of one of a

photosensitive acrylic resin film, a photosensitive polyimide film, a benzocyclobutene (BCB) film, an organic polysilazane film, and a siloxane film.

35. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 30, wherein said first film is comprised of a silicon nitride film and said second film is comprised of one of a photosensitive acrylic resin film and a photosensitive polyimide resin film.

36. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, wherein said common electrode composed of transparent metal and overlapping said data lines further overlaps an area between said scanning line and said common electrode lines.

37. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, wherein said common electrode composed of transparent metal and overlapping said data lines further overlaps a channel region of said thin film transistor.

38. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 15, wherein a storage capacity is formed between said common electrode lines comprised of a first metal layer of which said gate electrode is formed, and a pixel auxiliary electrode comprised of a second metal layer of which said drain electrode is formed.

39. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, wherein said common electrode lines are formed on opposite sides or on either side of said scanning line along said scanning line in a plan view of each of pixels.

40. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, further comprising a light-impermeable layer electrically connected to said common electrode and formed below said data lines in an area where said data lines are not overlapped by both said black matrix layer and said multi-layered color layers, and said common electrode do not overlap said data lines.

41. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, wherein said gate electrode is comprised of a first metal layer and said drain electrode is comprised of a second metal layer, said first and second metal layers being comprised of one of a chromium layer, an aluminum layer, a titanium layer, a molybdenum layer, a tungsten layer, and a multi-layered film including one or more of these layers.

42. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, wherein said pixel electrode and said source electrode or said pixel auxiliary electrode formed of a second metal layer are electrically connected to each other through a first contact hole in each of pixels at one of upper and lower sides when viewed from above, and said common electrode and said common electrode lines formed of a first metal layer are electrically connected to each other through a second contact hole in each of pixels at the other of upper and lower sides when viewed from above.

43. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, wherein said transparent electrode is composed of Indium-Tin-Oxide (ITO).

44. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 25, wherein a storage capacity is formed between said

common electrode lines comprised of a first metal layer of which said gate electrode is formed, and a pixel electrode comprised of a second metal layer of which said drain electrode is formed.

45. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 30, further comprising an interlayer insulating film formed between said data lines and said common electrode, said interlayer insulating film being comprised of a first film comprised of an inorganic film, and a second film covering said first film therewith and comprised of an organic film, said first film having a thickness equal to or greater than 0.25 $\mu$ m.

46. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, further comprising a color layer formed on said first substrate.

47. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 1, further comprising a black matrix layer formed on said first substrate.

48. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 46, further comprising a black matrix layer formed on said first substrate.

49. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 47, further comprising an interlayer insulating film formed between said data lines and said common electrode, said interlayer insulating film including at least an organic film, said black matrix or color layer being covered with said organic film.

50. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 48, further comprising an interlayer insulating film formed between said data lines and said common electrode, said interlayer insulating film including at least an organic film, said black matrix or color layer being covered with said organic film.

51. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 47, further comprising an interlayer insulating film formed between said data lines and said common electrode, said interlayer insulating film being comprised of a first film comprised of an inorganic film, and a second film covering said first film therewith and comprised of an organic film, said color or black matrix layer being sandwiched between said first and second films.

52. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 48, further comprising an interlayer insulating film formed between said data lines and said common electrode, said interlayer insulating film being comprised of a first film comprised of an inorganic film, and a second film covering said first film therewith and comprised of an organic film, said color or black matrix layer being sandwiched between said first and second films.

53. An in-plane switching mode active matrix type liquid crystal display device comprising:

(a) a first substrate;

(b) a second substrate located opposing said first substrate; and

(c) a liquid crystal layer sandwiched between said first and second substrates,

wherein said first substrate includes:

(a1) a thin film transistor having a gate electrode, a drain electrode and a source electrode;

(a2) a pixel electrode each associated to a pixel to be driven;

(a3) a common electrode to which a reference voltage is applied;

(a4) data lines;

(a5) a scanning line; and

(a6) common electrode lines,

said gate electrode is electrically connected to said scanning line, said drain electrode is electrically connected to said data lines, said source electrode is electrically connected to said pixel electrode, and said common electrode is electrically connected to said common electrode lines,

said pixel electrode is in a zigzag form and almost equally spaced away from adjacent ones,

said common electrode is in a zigzag form and almost equally spaced away from adjacent ones,

two-directional electric fields almost parallel with a surface of said first substrate are applied across said pixel electrode and said common electrode,

said in-plane switching mode active matrix type liquid crystal display device includes a first sub pixel area to which an electric field having a first direction is applied and in which molecular axes of liquid crystal in said liquid crystal layer are rotated in a first rotational direction in a plane parallel with a surface of said first substrate, and a second sub pixel area to which an electric field having a second direction is applied and in which said molecular axes are rotated in a second rotational direction which is different from said first rotational direction, in a plane parallel with a surface of said first substrate,

said common electrode is composed of transparent material, and is formed on a layer located closer to said liquid crystal layer than said data lines,

said common electrode entirely overlaps said data lines with an insulating layer being sandwiched therebetween except an area where said data lines are

located in the vicinity of said scanning line,

said in-plane switching mode active matrix type liquid crystal display device further includes a light-impermeable layer in an area where said common electrode entirely overlaps the data lines,

said light-impermeable layer is formed on said second substrate or on said first substrate such that said light-impermeable layer and said liquid crystal layer are located at the same side with respect to said data lines and that said light-impermeable layer faces said data lines,

said light-impermeable layer is comprised of a black matrix layer or multi-layered color layers,

said black matrix layer or said multi-layered color layers has a width smaller than a width of said common electrode overlapping said data lines,

said data lines extend in a zigzag along said pixel electrode.

54. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, wherein said common electrode is electrically connected to said common electrode lines through a contact hole in each of pixels.

55. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, wherein said data lines, said common electrode and said pixel electrode are bent by one in each of pixels.

56. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, wherein said data lines, said common electrode and said pixel electrode are bent by an odd number equal to or greater than 3 in each of pixels.

57. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, wherein said data lines, said common electrode and

said pixel electrode are bent by N in each of pixels, said N being defined in accordance with the equation (A):

$$30\ [\mu m] \leqq L/(N+1)\ [\mu m] \leqq 40\ [\mu m] \quad (A)$$

wherein L indicates a length of an opening.

58. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, wherein said black matrix layer facing said data lines is formed in a line.

59. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, wherein said black matrix layer facing said data lines is formed in a zigzag.

60. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, wherein said black matrix layer facing said data lines is bent in line with said data lines.

61. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, wherein a distance along a substrate between one of ends of said black matrix layer facing said data lines and an end of said data lines, located opposite to said one of ends of said black matrix layer, is equal to or greater than 4 $\mu$m in a cross-section taken along a plane perpendicular to a direction in which said data lines extend.

62. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 60, wherein a distance along a substrate between one of ends of said black matrix layer facing said data lines and an end of said data lines, located opposite to said one of ends of said black matrix layer, is equal to or greater than 4 $\mu$m in a cross-section taken along a plane perpendicular to a

direction in which said data lines extend.

63. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, wherein said black matrix layer is formed on said second substrate, and said black matrix layer facing said data lines overlaps said data lines anywhere by 4 $\mu$m or greater, when viewed from above.

64. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 59, wherein said black matrix layer is formed on said second substrate, and said black matrix layer facing said data lines overlaps said data lines anywhere by 4 $\mu$m or greater, when viewed from above.

65. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, wherein one of said first and second substrates is comprised further of a color layer formed in a line.

66. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, wherein one of said first and second substrates is comprised further of a color layer formed in a zigzag.

67. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 66, wherein said color layer is bent in line with said data lines.

68. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, further comprising a reverse-rotation preventing structure in a sub pixel area in which all liquid crystal molecules are rotated in the same direction, for preventing liquid crystal molecules from rotating in a direction opposite to said same direction,

said reverse-rotation preventing structure including an auxiliary electrode to which a voltage equal to a voltage of at least one of said pixel electrode and said common electrode is applied such that an initial alignment orientation of liquid crystal molecules overlaps a direction of an electric field generated in said sub pixel area in all sub-areas in said sub pixel areas, if said initial alignment orientation rotates by an acute angle.

69. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, further comprising an isolated floating electrode composed of a layer of which both said gate electrode and said drain electrode are composed,

said isolated floating electrode overlapping said common or pixel electrode at bending portions of said zigzag-shaped common or pixel electrode with said insulating layer being sandwiched therebetween, and having an extension extending in a direction in which said bending portions project, along an boundary between said first and second sub pixel areas.

70. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, wherein said zigzag-shaped data lines includes linear portions inclining towards the left and right from a direction in which said data lines extend.

71. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 70, wherein said black matrix layer is formed on said second substrate, and said black matrix layer facing said data lines and formed in a line has a width greater anywhere than a minimum width Dmin defined by the following equation:

$$Dmin = D + LS \times \tan\theta - (D-8) \times 2 \ [\mu m]$$

wherein D indicates a width of said data lines, LS indicates a length

obtained when said linear portions are projected towards said direction in which said data lines extend, and $\theta$ indicates an angle formed between said direction in which said data lines extend and said linear portions.

72. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, wherein said zigzag-shaped data lines includes first linear portions extending in parallel with a direction in which said data lines extend, and second linear portions inclining towards the left and right from said direction in which said data lines extend.

73. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 72, wherein said black matrix layer is formed on said second substrate, and said black matrix layer facing said data lines and formed in a line has a width greater anywhere than a minimum width Dmin defined by the following equation:

$$Dmin = D + LS \times \tan\theta - (D-8) \times 2 \ [\mu m]$$

wherein D indicates a width of said data lines, LS indicates a length obtained when said second linear portions are projected towards said direction in which said data lines extend, and $\theta$ indicates an angle formed between said direction in which said data lines extend and said second linear portions.

74. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 70, further comprising coverages which are fit into recessions formed at bending portions of said zigzag-shaped data lines.

75. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 70, further comprising a floating light-impermeable film composed of opaque metal, said floating light-impermeable film overlapping said data lines at recessions of bending portions of said data lines.

76. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, further comprising a projection projecting from a bending portion of each of said zigzag-shaped common electrode overlapping said zigzag-shaped data lines.

77. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, wherein said common electrode is wider than said data lines at opposite ends in a width-wise direction thereof by 1.5 $\mu$ m or greater.

78. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, wherein said black matrix layer has a width smaller than a width of said data lines, and overlaps said data lines in its entire length.

79. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, wherein said pixel electrode is composed of transparent material.

80. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, wherein said common electrode and said pixel electrode are formed in a common layer.

81. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, further comprising an interlayer insulating layer formed in a layer located immediately below said common electrode, and a pixel auxiliary electrode comprised of a single or a plurality of layer(s) formed below said interlayer insulating layer,

said pixel auxiliary electrode being electrically connected to said source

electrode, and being kept at a voltage equal to a voltage of said pixel electrode,

said pixel auxiliary electrode being composed of opaque metal.

82. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 81, wherein said pixel auxiliary electrode is at least partially formed below said pixel electrode formed in a layer in which said common electrode is formed, and having a plurality of comb-teeth.

83. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, further comprising an interlayer insulating layer formed in a layer located immediately below said common electrode, and a common auxiliary electrode comprised of a single or a plurality of layer(s) formed below said interlayer insulating layer,

said common auxiliary electrode being electrically connected to said common electrode lines, and being kept at a voltage equal to a voltage of said common electrode,

said common auxiliary electrode being composed of opaque metal.

84. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 83, wherein said common auxiliary electrode is formed below said common electrode having a plurality of comb-teeth.

85. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 82, further comprising a reverse-rotation preventing structure in a sub pixel area in which all liquid crystal molecules are rotated in the same direction, for preventing liquid crystal molecules from rotating in a direction opposite to said same direction,

at least a part of edges of said pixel auxiliary electrodes and said common electrode lines being formed oblique such that an initial alignment orientation of

liquid crystal molecules overlaps a direction of an electric field generated in said sub pixel area in all sub-areas in said sub pixel areas, if said initial alignment orientation rotates by an acute angle.

86. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 82, wherein said zigzag-shaped common and pixel electrodes define a sub pixel area in which liquid crystal molecules rotate in two directions in a pixel,

some of said pixel auxiliary electrodes having a projection projecting from a bending portion of each of said zigzag-shaped pixel electrode and in a direction in which said bending portion projects, along a boundary between two sub pixel areas in which liquid crystal molecules rotate in different directions.

87. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 84, wherein said zigzag-shaped common and pixel electrodes define a sub pixel area in which liquid crystal molecules rotate in two directions in a pixel,

some of said common auxiliary electrodes having a projection projecting from a bending portion of each of said zigzag-shaped common electrode, in a direction in which said bending portion projects, along a boundary between two sub pixel areas in which liquid crystal molecules rotate in different directions, for stabilizing rotation of said liquid crystal molecules between said two sub pixel areas.

88. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, wherein said pixel electrode is formed of a second metal layer of which said data lines are formed.

89. The in-plane switching mode active matrix type liquid crystal display

device as set forth in claim 88, wherein said pixel electrode is formed of a second metal layer of which said drain electrode is formed, in an area in which an image is displayed, and a portion of said common electrode other than a portion composed of transparent metal and overlapping said data lines is formed of a first metal layer of which said gate electrode is formed.

90. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 89, further comprising an interlayer insulating film sandwiched between said data lines and said common electrode overlapping said data lines and composed of transparent metal, said interlayer insulating film being formed only below said common electrode.

91. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, further comprising an interlayer insulating film sandwiched between said data lines and said common electrode overlapping said data lines and composed of transparent metal, said interlayer insulating film being comprised of an inorganic film.

92. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, further comprising an interlayer insulating film sandwiched between said data lines and said common electrode overlapping said data lines and composed of transparent metal, said interlayer insulating film being comprised of an organic film.

93. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, further comprising an interlayer insulating film sandwiched between said data lines and said common electrode overlapping said data lines and composed of transparent metal, said interlayer insulating film being comprised of a first film comprised of an inorganic film and a second film

comprised of an organic film and covering said first film therewith.

94. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 91, wherein said inorganic film is comprised of one of a silicon nitride film, an inorganic polysilazane film, a silicon oxide film, and a multi-layered structure including two or more of them.

95. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 93, wherein said inorganic film is comprised of one of a silicon nitride film, an inorganic polysilazane film, a silicon oxide film, and a multi-layered structure including two or more of them.

96. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 92, wherein said organic film is comprised of one of a photosensitive acrylic resin film, a photosensitive polyimide film, a benzocyclobutene (BCB) film, an organic polysilazane film, and a siloxane film.

97. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 93, wherein said organic film is comprised of one of a photosensitive acrylic resin film, a photosensitive polyimide film, a benzocyclobutene (BCB) film, an organic polysilazane film, and a siloxane film.

98. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 93, wherein said first film is comprised of a silicon nitride film and said second film is comprised of one of a photosensitive acrylic resin film and a photosensitive polyimide resin film.

99. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 81, wherein a storage capacity is formed between said

common electrode lines comprised of a first metal layer of which said gate electrode is formed, and a pixel auxiliary electrode comprised of a second metal layer of which said drain electrode is formed.

100. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, wherein said transparent electrode is composed of Indium-Tin-Oxide (ITO).

101. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 88, wherein a storage capacity is formed between said pixel electrode comprised of said second metal layer of which said drain electrode is formed, and said common electrode lines comprised of said first metal layer of which said gate electrode is formed.

102. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 88, wherein said zigzag-shaped common and pixel electrodes define a sub pixel area in which liquid crystal molecules are rotated in two directions in a pixel, and

some of at least one of said common and pixel electrodes have a projection projecting from a bending portion of each of said zigzag-shaped common electrode, in a direction in which said bending portion projects, along a boundary between two sub pixel areas in which liquid crystal molecules rotate in different directions, for stabilizing rotation of said liquid crystal molecules between said two sub pixel areas.

103. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 93, further comprising an interlayer insulating film formed between said data lines and said common electrode, said interlayer insulating film being comprised of a first film comprised of an inorganic film, and

a second film covering said first film therewith and comprised of an organic film, said first film having a thickness equal to or greater than 0.25 $\mu$ m.

104. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, further comprising a color layer formed on said first substrate.

105. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 53, further comprising a black matrix layer formed on said first substrate.

106. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 104, further comprising a black matrix layer formed on said first substrate.

107. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 105, further comprising an interlayer insulating film formed between said data lines and said common electrode, said interlayer insulating film including at least an organic film, said color or black matrix layer being covered with said organic film.

108. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 106, further comprising an interlayer insulating film formed between said data lines and said common electrode, said interlayer insulating film including at least an organic film, said color or black matrix layer being covered with said organic film.

109. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 105, further comprising an interlayer insulating film

formed between said data lines and said common electrode, said interlayer insulating film being comprised of a first film comprised of an inorganic film, and a second film covering said first film therewith and comprised of an organic film, said color layer being sandwiched between said first and second films.

110. The in-plane switching mode active matrix type liquid crystal display device as set forth in claim 106, further comprising an interlayer insulating film formed between said data lines and said common electrode, said interlayer insulating film being comprised of a first film comprised of an inorganic film, and a second film covering said first film therewith and comprised of an organic film, said color layer being sandwiched between said first and second films.

111. An in-plane switching mode active matrix type liquid crystal display device comprising:

(a) a first substrate;

(b) a second substrate located opposing said first substrate; and

(c) a liquid crystal layer sandwiched between said first and second substrates,

wherein said first substrate includes:

(a1) a thin film transistor having a gate electrode, a drain electrode and a source electrode;

(a2) a pixel electrode each associated to a pixel to be driven;

(a3) a common electrode to which a reference voltage is applied;

(a4) data lines;

(a5) a scanning line; and

(a6) common electrode lines,

said gate electrode is electrically connected to said scanning line, said drain electrode is electrically connected to said data lines, said source electrode is electrically connected to said pixel electrode, and said common electrode is

electrically connected to said common electrode lines,

said pixel electrode is in a zigzag form and almost equally spaced away from adjacent ones;

said common electrode is in a zigzag form and almost equally spaced away from adjacent ones,

two-directional electric fields almost parallel with a surface of said first substrate are applied across said pixel electrode and said common electrode,

said in-plane switching mode active matrix type liquid crystal display device includes a first sub pixel area to which an electric field having a first direction is applied and in which molecular axes of liquid crystal in said liquid crystal layer are rotated in a first rotational direction in a plane parallel with a surface of said first substrate, and a second sub pixel area to which an electric field having a second direction is applied and in which said molecular axes are rotated in a second rotational direction which is different from said first rotational direction, in a plane parallel with a surface of said first substrate,

an opening of said first substrate extends in a direction perpendicular to a direction in which said data lines extend,

said common electrode is composed of transparent material, and is formed on a layer located closer to said liquid crystal layer than said data lines,

said common electrode entirely overlaps said data lines with an insulating layer being sandwiched therebetween except an area where said data lines are located in the vicinity of said scanning line,

said common electrode is electrically connected to said common electrode lines through a contact hole in each of pixels,

said in-plane switching mode active matrix type liquid crystal display device further includes a light-impermeable layer in an area where said common electrode entirely overlaps the data lines,

said light-impermeable layer is formed on said second substrate or on said first substrate such that said light-impermeable layer and said liquid crystal layer

are located at the same side with respect to said data lines and that said light-impermeable layer faces said data lines,

said light-impermeable layer is comprised of a black matrix layer or multi-layered color layers,

said black matrix layer or said multi-layered color layers has a width smaller than a width of said common electrode overlapping said data lines,

said data lines extend in a line,

a gate line which constitutes said gate electrode extends in a zigzag.

112. An in-plane switching mode active matrix type liquid crystal display device comprising:

(a) a first substrate;

(b) a second substrate located opposing said first substrate; and

(c) a liquid crystal layer sandwiched between said first and second substrates,

wherein said first substrate includes:

(a1) a thin film transistor having a gate electrode, a drain electrode and a source electrode;

(a2) a pixel electrode each associated to a pixel to be driven;

(a3) a common electrode to which a reference voltage is applied;

(a4) data lines;

(a5) a scanning line; and

(a6) common electrode lines,

said gate electrode is electrically connected to said scanning line, said drain electrode is electrically connected to said data lines, said source electrode is electrically connected to said pixel electrode, and said common electrode is electrically connected to said common electrode lines,

said pixel electrode is in a zigzag form and almost equally spaced away from adjacent ones,

said common electrode is in a zigzag form and almost equally spaced away from adjacent ones,

two-directional electric fields almost parallel with a surface of said first substrate is applied across said pixel electrode and said common electrode,

said in-plane switching mode active matrix type liquid crystal display device includes a first sub pixel area to which an electric field having a first direction is applied and in which molecular axes of liquid crystal in said liquid crystal layer are rotated in a first rotational direction in a plane parallel with a surface of said first substrate, and a second sub pixel area to which an electric field having a second direction is applied and in which said molecular axes are rotated in a second rotational direction which is different from said first rotational direction, in a plane parallel with a surface of said first substrate,

an isolated floating electrode formed of a layer of which said gate electrode or said drain electrode is formed overlaps said common electrode or said pixel electrode at bending portions of said zigzag-shaped common or pixel electrode with an insulating film being sandwiched therebetween,

at least one of said common and pixel electrodes have a projection projecting from bending portions of said zigzag-shaped common and pixel electrodes in a direction in which said bending portions project, along a boundary between said first and second sub pixel areas.

113. An electronic device including an in-plane switching mode active matrix type liquid crystal display device comprised of:

(a) a first substrate;

(b) a second substrate located opposing said first substrate; and

(c) a liquid crystal layer sandwiched between said first and second substrates,

wherein said first substrate includes:

(a1) a thin film transistor having a gate electrode, a drain electrode and a

source electrode;

(a2) a pixel electrode each associated to a pixel to be driven;

(a3) a common electrode to which a reference voltage is applied;

(a4) data lines;

(a5) a scanning line; and

(a6) common electrode lines,

said gate electrode is electrically connected to said scanning line, said drain electrode is electrically connected to said data lines, said source electrode is electrically connected to said pixel electrode, and said common electrode is electrically connected to said common electrode lines,

molecular axes of liquid crystal in said liquid crystal layer are rotated in a plane parallel with said first substrate by an electric field substantially parallel with a plane of said first substrate and to be applied between said pixel electrode and said common electrode, to thereby display certain images,

said common electrode is composed of transparent material, and are formed on a layer located closer to said liquid crystal layer than said data lines,

said common electrode entirely overlaps said data lines with an insulating layer being sandwiched therebetween except an area where said data lines are located in the vicinity of said scanning line,

said in-plane switching mode active matrix type liquid crystal display device further includes a light-impermeable layer in an area where said common electrode entirely overlaps the data lines,

said light-impermeable layer is formed on said second substrate or on said first substrate such that said light-impermeable layer and said liquid crystal layer are located at the same side with respect to said data lines and that said light-impermeable layer faces said data lines,

said light-impermeable layer is comprised of a black matrix layer or multi-layered color layers,

said black matrix layer or said multi-layered color layers has a width smaller

than a width of said common electrode overlapping said data lines.

114. An electronic device including an in-plane switching mode active matrix type liquid crystal display device comprised of:

(a) a first substrate;

(b) a second substrate located opposing said first substrate; and

(c) a liquid crystal layer sandwiched between said first and second substrates,

wherein said first substrate includes:

(a1) a thin film transistor having a gate electrode, a drain electrode and a source electrode;

(a2) a pixel electrode each associated to a pixel to be driven;

(a3) a common electrode to which a reference voltage is applied;

(a4) data lines;

(a5) a scanning line; and

(a6) common electrode lines,

said gate electrode is electrically connected to said scanning line, said drain electrode is electrically connected to said data lines, said source electrode is electrically connected to said pixel electrode, and said common electrode is electrically connected to said common electrode lines,

said pixel electrode is in a zigzag form and almost equally spaced away from adjacent ones,

said common electrode is in a zigzag form and almost equally spaced away from adjacent ones,

two-directional electric fields almost parallel with a surface of said first substrate are applied across said pixel electrode and said common electrode,

said in-plane switching mode active matrix type liquid crystal display device includes a first sub pixel area to which an electric field having a first direction is applied and in which molecular axes of liquid crystal in said liquid crystal layer

are rotated in a first rotational direction in a plane parallel with a surface of said first substrate, and a second sub pixel area to which an electric field having a second direction is applied and in which said molecular axes are rotated in a second rotational direction which is different from said first rotational direction, in a plane parallel with a surface of said first substrate,

said common electrode is composed of transparent material, and is formed on a layer located closer to said liquid crystal layer than said data lines,

said common electrode entirely overlaps said data lines with an insulating layer being sandwiched therebetween except an area where said data lines are located in the vicinity of said scanning line,

said in-plane switching mode active matrix type liquid crystal display device further includes a light-impermeable layer in an area where said common electrode entirely overlaps the data lines,

said light-impermeable layer is formed on said second substrate or on said first substrate such that said light-impermeable layer and said liquid crystal layer are located at the same side with respect to said data lines and that said light-impermeable layer faces said data lines,

said light-impermeable layer is comprised of a black matrix layer or multi-layered color layers,

said black matrix layer or said multi-layered color layers has a width smaller than a width of said common electrode overlapping said data lines,

said data lines extend in a zigzag along said pixel electrode.

115. An electronic device including an in-plane switching mode active matrix type liquid crystal display device comprised of:

(a) a first substrate;

(b) a second substrate located opposing said first substrate; and

(c) a liquid crystal layer sandwiched between said first and second substrates,

wherein said first substrate includes:

(a1) a thin film transistor having a gate electrode, a drain electrode and a source electrode;

(a2) a pixel electrode each associated to a pixel to be driven;

(a3) a common electrode to which a reference voltage is applied;

(a4) data lines;

(a5) a scanning line; and

(a6) common electrode lines,

said gate electrode is electrically connected to said scanning line, said drain electrode is electrically connected to said data lines, said source electrode is electrically connected to said pixel electrode, and said common electrode is electrically connected to said common electrode lines,

said pixel electrode is in a zigzag form and almost equally spaced away from adjacent ones;

said common electrode is in a zigzag form and almost equally spaced away from adjacent ones,

two-directional electric fields almost parallel with a surface of said first substrate are applied across said pixel electrode and said common electrode,

said in-plane switching mode active matrix type liquid crystal display device includes a first sub pixel area to which an electric field having a first direction is applied and in which molecular axes of liquid crystal in said liquid crystal layer are rotated in a first rotational direction in a plane parallel with a surface of said first substrate, and a second sub pixel area to which an electric field having a second direction is applied and in which said molecular axes are rotated in a second rotational direction which is different from said first rotational direction, in a plane parallel with a surface of said first substrate,

an opening of said first substrate extends in a direction perpendicular to a direction in which said data lines extend,

said common electrode is composed of transparent material, and is formed on

a layer located closer to said liquid crystal layer than said data lines,

said common electrode entirely overlaps said data lines with an insulating layer being sandwiched therebetween except an area where said data lines are located in the vicinity of said scanning line,

said common electrode is electrically connected to said common electrode lines through a contact hole in each of pixels,

said in-plane switching mode active matrix type liquid crystal display device further includes a light-impermeable layer in an area where said common electrode entirely overlaps the data lines,

said light-impermeable layer is formed on said second substrate or on said first substrate such that said light-impermeable layer and said liquid crystal layer are located at the same side with respect to said data lines and that said light-impermeable layer faces said data lines,

said light-impermeable layer is comprised of a black matrix layer or multi-layered color layers,

said black matrix layer or said multi-layered color layers has a width smaller than a width of said common electrode overlapping said data lines,

said data lines extends in a line,

a gate line constitutes said gate electrode extending in a zigzag.

116. An electronic device including an in-plane switching mode active matrix type liquid crystal display device comprised of:

(a) a first substrate;

(b) a second substrate located opposing said first substrate; and

(c) a liquid crystal layer sandwiched between said first and second substrates,

wherein said first substrate includes:

(a1) a thin film transistor having a gate electrode, a drain electrode and a source electrode;

(a2) a pixel electrode each associated to a pixel to be driven;

(a3) a common electrode to which a reference voltage is applied;

(a4) data lines;

(a5) a scanning line; and

(a6) common electrode lines,

said gate electrode is electrically connected to said scanning line, said drain electrode is electrically connected to said data lines, said source electrode is electrically connected to said pixel electrode, and said common electrode is electrically connected to said common electrode lines,

said pixel electrode is in a zigzag form and almost equally spaced away from adjacent ones,

said common electrode is in a zigzag form and almost equally spaced away from adjacent ones,

two-directional electric fields almost parallel with a surface of said first substrate is applied across said pixel electrode and said common electrode,

said in-plane switching mode active matrix type liquid crystal display device includes a first sub pixel area to which an electric field having a first direction is applied and in which molecular axes of liquid crystal in said liquid crystal layer are rotated in a first rotational direction in a plane parallel with a surface of said first substrate, and a second sub pixel area to which an electric field having a second direction is applied and in which said molecular axes are rotated in a second rotational direction which is different from said first rotational direction, in a plane parallel with a surface of said first substrate,

said gate electrode or an isolated floating electrode formed of a layer of which said drain electrode is formed overlaps said common electrode or said pixel electrode at bending portions of said zigzag-shaped common or pixel electrode with an insulating film being sandwiched therebetween,

at least one of said common and pixel electrodes have a projection projecting from bending portions of said zigzag-shaped common and pixel electrodes in a

direction in which said bending portions project, along a boundary between said first and second sub pixel areas.

117. The electronic device as set forth in claim 114, wherein said in-plane switching mode active matrix type liquid crystal display device further includes a black matrix layer formed on said first substrate.

118. The electronic device as set forth in claim 114, wherein said in-plane switching mode active matrix type liquid crystal display device further includes an interlayer insulating film formed between said data lines and said common electrode, said interlayer insulating film including at least an organic film, said color or black matrix layer being covered with said organic film.

119. A method of fabricating an in-plane switching mode active matrix type liquid crystal display device comprising:

(a) a first substrate;

(b) a second substrate located opposing said first substrate; and

(c) a liquid crystal layer sandwiched between said first and second substrates,

wherein said first substrate includes:

(a1) a thin film transistor having a gate electrode, a drain electrode and a source electrode;

(a2) a pixel electrode each associated to a pixel to be driven;

(a3) a common electrode to which a reference voltage is applied;

(a4) data lines;

(a5) a scanning line;

(a6) common electrode lines;

(a7) a data line terminal;

(a8) a scanning line terminal; and

(a9) a common electrode line terminal,

said gate electrode is electrically connected to said scanning line, said drain electrode is electrically connected to said data lines, said source electrode is electrically connected to said pixel electrode, and said common electrode is electrically connected to said common electrode lines, and

molecular axes of liquid crystal in said liquid crystal layer are rotated in a plane parallel with said first substrate by an electric field substantially parallel with a plane of said first substrate and to be applied between said pixel electrode and said common electrode, to thereby display certain images,

said method comprising the steps of:

(a) forming said thin film transistor, said data lines, said scanning line and said common electrode line, and thereafter, forming an interlayer insulating film thereover;

(b) etching said interlayer insulating film to form contact holes reaching said data lines, said scanning line and said common electrode line;

(c) deposit transparent metal all over a product resulted from said step (b) to cover inner surfaces of said contact holes with said transparent metal, thereby forming said data line terminal, said scanning line terminal and said common electrode line terminal; and

(d) etching said transparent metal to form said common electrode such that said common electrode overlaps said data lines.

120. The method as set forth in claim 119, wherein said transparent metal is etched in said step (d) further for forming said pixel electrode.

121. The method as set forth in claim 119, wherein said step (b) includes the step of forming a second contact hole reaching said source electrode of said thin film transistor, and said step (c) includes the step of covering an inner surface of said second contact hole with said transparent metal.

122. The method as set forth in claim 119, wherein said step (b) includes the step of forming a third contact hole reaching said common electrode lines, said step (c) includes the step of covering an inner surface of said third contact hole with said transparent metal, and said step (d) includes the step of etching said transparent metal to electrically connect said common electrode to said third contact hole.

123. A method of fabricating an in-plane switching mode active matrix type liquid crystal display device comprising:

(a) a first substrate;

(b) a second substrate located opposing said first substrate; and

(c) a liquid crystal layer sandwiched between said first and second substrates,

wherein said first substrate includes:

(a1) a thin film transistor having a gate electrode, a drain electrode and a source electrode;

(a2) a pixel electrode each associated to a pixel to be driven;

(a3) a common electrode to which a reference voltage is applied;

(a4) data lines;

(a5) a scanning line; and

(a6) common electrode lines,

said gate electrode is electrically connected to said scanning line, said drain electrode is electrically connected to said data lines, said source electrode is electrically connected to said pixel electrode, and said common electrode is electrically connected to said common electrode lines,

said pixel electrode is in a zigzag form and almost equally spaced away from adjacent ones,

said common electrode is in a zigzag form and almost equally spaced away

from adjacent ones,

two-directional electric fields almost parallel with a surface of said first substrate are applied across said pixel electrode and said common electrode,

said in-plane switching mode active matrix type liquid crystal display device includes a first sub pixel area to which an electric field having a first direction is applied and in which molecular axes of liquid crystal in said liquid crystal layer are rotated in a first rotational direction in a plane parallel with a surface of said first substrate, and a second sub pixel area to which an electric field having a second direction is applied and in which said molecular axes are rotated in a second rotational direction which is different from said first rotational direction, in a plane parallel with a surface of said first substrate,

said method comprising the steps of:

(a) forming said thin film transistor, said data lines, said scanning line and said common electrode line, and thereafter, forming an interlayer insulating film thereover;

(b) etching said interlayer insulating film to form contact holes reaching said data lines, said scanning line and said common electrode line;

(c) deposit transparent metal all over a product resulted from said step (b) to cover inner surfaces of said contact holes with said transparent metal, thereby forming said data line terminal, said scanning line terminal and said common electrode line terminal; and

(d) etching said transparent metal to form said common electrode such that said common electrode overlaps said data lines.